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07.2006	

Vibrating plate

BPU ...

Operator's manual

Contents

1. Foreword 5

2. Safety information 7

2.1 General instructions 7
2.2 Operation 7
2.3 Safety checks 9
2.4 Maintenance 10
2.5 Transport 11
2.6 Maintenance checks 11

3. Technical data 12

4. Description 14

4.1 Field of application 14
4.2 Max. permissible tilt 14
4.3 Functional description 15

5. Transport to the worksite 17

6. Recommendations for compacting 18

7. Operation 19

7.1 Start preparation 19
7.2 Starting the engine 19
7.3 Operating in the forward and reverse direction 20
7.4 Turn off the engine 20

8. Maintenance 21

8.1 Maintenance schedule 21
8.2 Checking engine oil level 21
8.3 Changing the engine oil 23
8.4 Cleaning the air filter / replacing the air filter inserts 24
8.5 Checking / cleaning / replacing the spark plug 25
8.6 Checking exciter V-belt 26
8.7 Changing exciter V-belt 26
8.8 Checking / filling hydraulic oil level 26
8.9 Checking exciter oil level 27
8.10 Changing exciter oil 27

9. Malfunction 28

9.1 Forward travel speed too low 28
9.2 Reverse travel speed too low 28
9.3 No forward movement 28
9.4 Loss of hydraulic oil 28

Contents

9.5 Engine will not start 29

EC Declaration of Conformity 31

DIN EN ISO 9001 Certificate 33

1. Foreword

For your own safety and protection from bodily injuries, carefully read, understand and follow the safety information in this manual.

Please operate and maintain your Wacker machine in accordance with the instructions in this operator's manual. Your Wacker machine will reward you with troublefree operation and a high degree of availability.

Defective components must be replaced immediately.

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Important note

This machine is equipped with an EPA-certified motor.

Relevant details can be found in the instructions of the motor manufacturer.

WARNING

The motor's exhaust fumes contain chemicals which the State of California knows may cause cancer, congenital defects or other reproductive anomalies.

Caution

This is an EPA motor.

Regulating the motor speed influences the EPA certification and emission.

The motor may only be set by a skilled technician.

For more detailed information, please contact your nearest motor or Wacker representative.

2. Safety information

For vibrating plates with combustion engine drive

2.1 General instructions

2.1.1 Vibrating plates may only be operated by persons who

- are at least 18 years of age,
- are physically and mentally fit for this job,
- have been instructed in operating vibrating plates and have proved their ability for the job to the employer,
- may be expected to carry out the job they are charged with carefully.

The persons must be assigned the job of operating vibrating plates by the employer.

2.1.2 Vibrating plates are to be applied only for compacting work. Both the manufacturer's operator's manual and this safety information must be observed.

2.1.3 The persons charged with the operation of vibrating plates must be made familiar with the necessary safety measures relating to the machine. In case of extraordinary uses, the employer shall give the necessary additional instructions.

2.1.4 It is possible that these vibrating plates exceed the admissible sound level of 89 dB (A). If the sound level reaches 89 dB (A) or more, the employees must wear ear protection.

2.2 Operation

2.2.1 The engine is started using a recoil starter. The decompression automatic allows an easy and kickback-free start-up procedure.

2.2.2 The function of operation levers or elements must not be influenced or rendered ineffective.

2.2.3 The operator must not leave the operator's area during the operation of the machine.

2.2.4 Before going on breaks, the operator must switch off the motor of the machine. The machine must be set down so it cannot tip over.

2.2.5 The tank may only be filled when the motor is switched off and the fuel must not make contact with hot parts or fall on the ground.

2.2.6 Open flames and smoking are strictly prohibited in the immediate vicinity of this machine.

2.2.7 The tank lid must be tightly secured. When the motor is switched off, the fuel tap - if there is one - must be closed. When transported over long distances, the tank of gasoline or mixed gasoline driven engines must be completely emptied.

Leaking fuel tanks can lead to explosions and therefore must be replaced immediately.

2.2.8 Do not operate this machine in areas where explosions may occur.

2.2.9 While operating vibrating plates with a combustion motor in closed rooms, tunnels, drifts or deep trenches make sure that there is a sufficient intake of fresh air.

2.2.10 While operating vibrating plates, keep hands, feet and clothing away from moving parts. Protective shoes must be worn.

2.2.11 While working on cracked, cavity, acclivity or escarpment edges and on trench edges and steps, operate the vibrating plates so that they cannot tip over or fall down.

2.2.12 A sufficient load-bearing capacity of the surface or foundation to be compacted must be ensured.

2.2.13 Wear suitable protective clothing during work and maintenance work.

2.2.14 When operating in the reverse direction, the operator must operate the vibrating plate from the side in order to protect themselves from being crushed between the end of the guide handle / machine and an obstacle. Great care is necessary when working on uneven terrain and compacting large materials. A safe distance must be kept here.

2.2.15 Vibrating plates are to be guided in such a way that hand injuries caused by solid objects are avoided.

2.2.16 Vibrating plates must be so installed and operated that their vertical stability is ensured.

2.2.17 Machines with integrated driving mechanisms must not be set down or stored on the chassis. The driving mechanism is only intended for the transport of this machine.

2.3 Safety checks

2.3.1 Vibrating plates may only be operated with all safety devices installed.

2.3.2 Before starting operation, the operator has to check that all control and safety devices are functioning properly.

2.3.3 If defects on the safety devices or other defects impairing the operational safety of machine are observed, the supervisor must be informed immediately.

2.3.4 If there are defects jeopardizing operational safety, the machine has to be switched off immediately.

2.3.5 All auxiliary materials, fuel, lubricants and coolants are to be stored in marked containers according to the manufacturer's regulations.

2.4 Maintenance

2.4.1 Only use original spare parts. Alterations to this machine, incl. adjustments of the maximum engine speed set by the manufacturer may only be carried out with the express permission of WACKER. In case of non-observance, all liability shall be refused.

2.4.2 Maintenance work may only be carried out when the drives are stationary. If a spark plug connector is present, this should be removed. This procedure may only be waived if the work cannot be carried out when the motor is switched off.

2.4.3 While using vibrating plates with an electronic start, the battery must be disconnected in each case before working on the electrical parts of the machine.

2.4.4 Hydraulic lines must be depressurized before working on them. Great care is required when disassembling hydraulic lines, as the oil can reach temperatures of up to 80 °C. Protect the eyes from splashes.

2.4.5 As soon as maintenance and repair jobs have been completed, all safety devices must be properly reinstalled.

2.4.6 In order to prevent malfunctions, the machine should be cleaned using a water hose after each use. High pressure cleaners or chemical agents must not be used.

2.5 Transport

2.5.1 For the loading and transportation of compacting machines with hoisting gear, suitable sling chains must be secured at the relevant fixing point.

2.5.2 Loading ramps must be able to bear the load and be in a stable position. Make sure that no one can be endangered if the machine slips away or tips over, or if parts suddenly move upward or downward.

2.5.3 When vibrating plates are being transported in vehicles, precautions have to be taken to ensure that they do not slip or fall over.

2.6 Maintenance checks

2.6.1 According to the conditions and frequency of use, vibrating plates must be checked for safe operation at least once a year by skilled technicians, such as those employed by WACKER service stations, and repaired if necessary.

Please observe the appropriate rules and regulations valid in your country.

3. Technical data

	BPU 2540	BPU 3050
Item no.	0008954	0008955
Length x Width X Height mm:	733 x 400 x 1170	733 x 500 x 1170
Operating weight kg:	144	160
Forward and reverse movement m/min:	21	
Area capacity m^2/h:	504	630
Powertrain	From the drive motor over the centrifugal clutch and V-belt directly to the exciter	
Exciter		
Vibrations rpm^{-1} (Hz):	Approx. 5,400 (90)	
Centrifugal force kN:	25	30
Multi-range oil	Fuchs Titan Unic 10W40 MC (SAE 10W40)	
Oil quantity l:	0.6	
Drive motor	Air-cooled, single-cylinder, four-stroke gasoline engine with automatic shutdown if there is insufficient oil	
Engine displacement cm^3:	169	265
Engine speed min^{-1}:	2,800	
Rated power (*) kW (PS)	2.7 (3.7)	4.8 (6.5)
Fuel	Regular gasoline, lead-free (91 octane)	
Fuel consumption l/h:	0.8	1.1
Tank capacity l:	3.6	6.1
Spark plug Model:	NGK BPR2HS	

	BPU 2540	BPU 3050
Spark plug air gap mm:	0.6 - 0.7	
Engine oil	Fuchs Titan Unic 10W40 MC (SAE 10W40)	
Oil quantity	0.6	1.1
Hydraulic control		
Hydraulic oil	Fuchs Renolin MR 520	
Oil quantity	0.4	
Sound pressure level at operator's station L_{PA}:	89 dB(A)	93 dB(A)
The weighted effective acceleration value, determined according to EN ISO 5349 m/s^2:	6.5	5.3

(*) corresponds to the installed effective power in accordance with Directive 2000/14/EC.

4. Description

4.1 Field of application

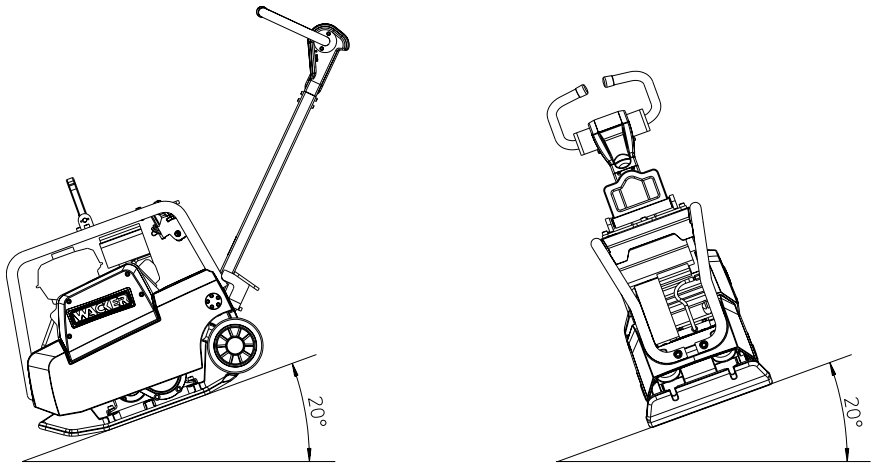
4.1.1 BPU 2540

Through the low width and continuous switchability especially suitable for all surface compacting work in limited space conditions (e.g. in cable trenches) or the compacting of edge trims when repairing blacktops, as well as all compacting work where the use of a large machine is not possible.

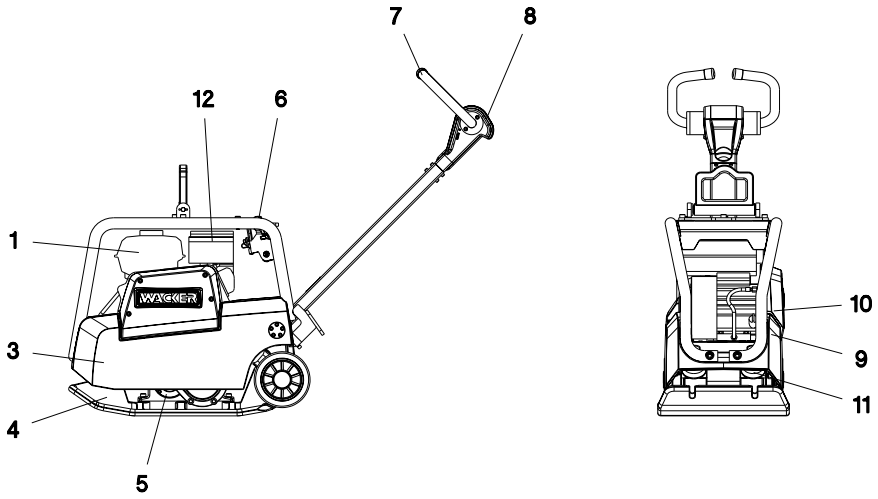
4.1.2 BPU 3050

The range of application reaches from trench and surface compacting, including semi-cohesive ground, to pressing interlocking paving stones into place.

4.2 Max. permissible tilt

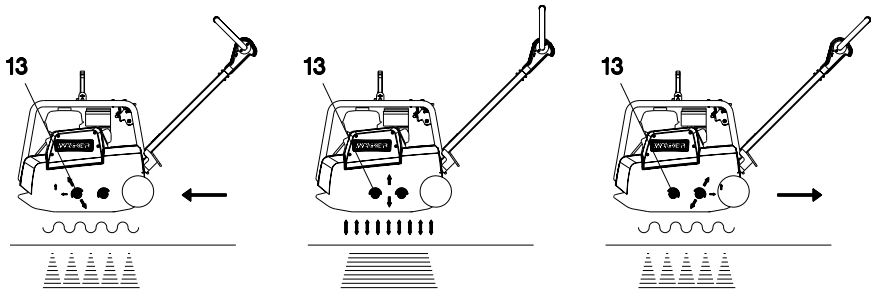


4.3 Functional description



The vibration required for compaction is generated by the exciter (5) that is permanently attached to the base plate (4). The exciter is designed as a central vibrator with directional vibrations. This principle allows you to change the direction of vibration by simply turning the eccentric weights (13). This makes a gradual transition possible between the vibration states: moving forward, moving in reverse and in a stationary position. This procedure is hydraulically controlled with the control handle (7) on the guide handle head (8).

When hydraulic oil is lost the machine operates in the reverse direction (danger of crushing).



Forward movement Stationary Reverse movement

The drive motor (1) attached to the upper mass (3) powers the exciter (5). The torque is transferred non-positively by the centrifugal clutch (9) and the exciter V-belt (10).

When the motor speed is low, the centrifugal clutch (9) interrupts the power flow to the exciter (5) which allows the drive motor (1) to idle properly. The speed of the drive motor can be continuously varied using the throttle regulation lever (6).

Description

The upper mass (3) and the base plate (4) are connected to each other via 4 vibration-damping rubber metal shockmounts (11). This damping prevents very high frequencies from being transferred to the upper mass (3). This maintains proper functioning of the drive motor (1) despite a high compaction capacity.

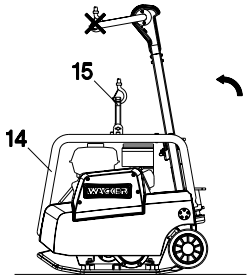
5. Transport to the worksite

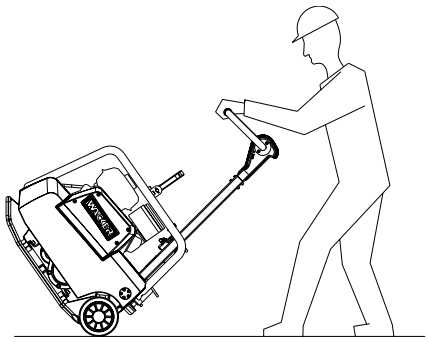
Requirements:

* When transporting the vibrating plate compactor, use only suitable hoisting gear with a minimum load-bearing capacity of 200 kg.
* Always turn off the motor during transportation!
* Vertically set guide handle head and lock into place.
* Fasten suitable lifting tackle to the central suspension (15) provided.
* If you transport the vibrating plate compactor on the cargo area of a vehicle, strap it down securely at the protective frame (14).

When using the integrated driving mechanism, you must turn off the engine. If the engine is running, engine lubrication cannot be ensured in the transport position. This can cause serious engine damage. There is also a danger that oil may leak out of the engine crankcase breather.

Note: Also observe the regulations in the chapter Safety information.





6. Recommendations for compacting

6.0.1 Condition of the ground

The maximum layer thickness depends on several factors such as the condition of the ground/soil, the moisture, grading etc.

This is why it is not always possible to make precise recommendations.

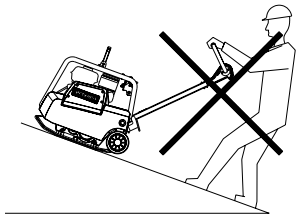
Recommendation: In certain cases, determine the maximum layer thickness by conducting compacting tests and taking ground samples.

6.0.2 Compacting on a slope

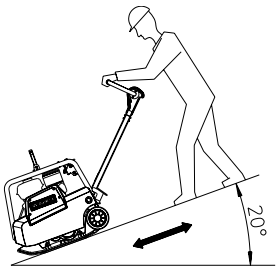
The following points must be observed if you plan to compact inclined surfaces (slopes, escarpments):

* Start at the bottom of a slope (slopes that can also be easily managed in an upward direction can be safely travelled in a downward direction).
* The operator must never stand with their back facing the bottom.
* Do not exceed maximum tilt of 20°.

Working on slopes that exceed this tilt will cause the engine lubrication system to fail and thus inevitably damage parts of the engine.



Incorrect !



Correct !

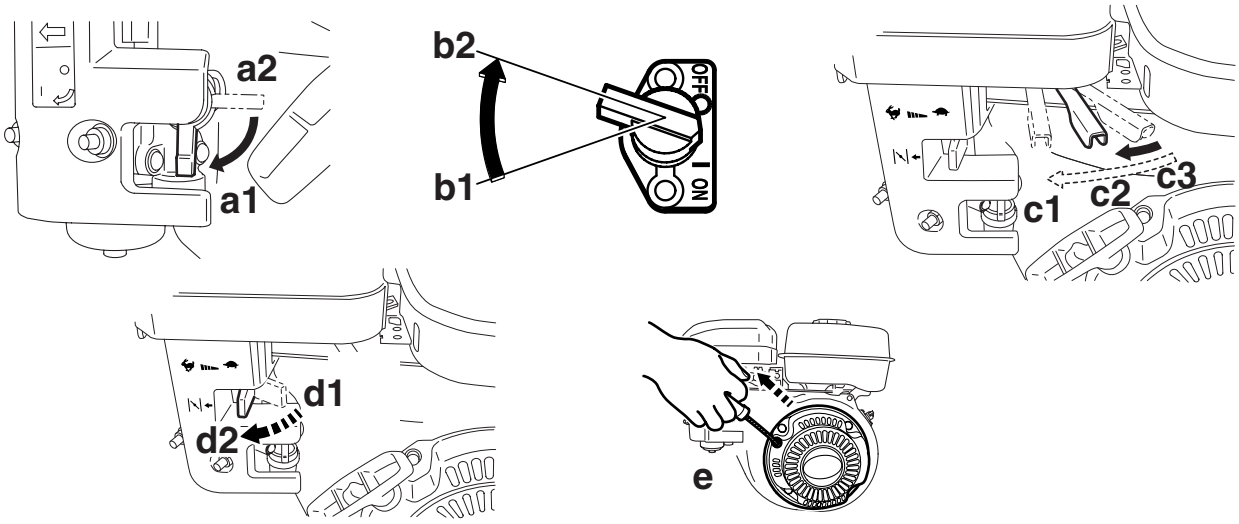
7. Operation

7.1 Start preparation

Before you start the engine, check the following:

- Fuel level – the tank should be at least half full.
- Motor oil level.
- Air filter.
- Fuel lines for leaks.
- External screw connections for tightness.

7.2 Starting the engine



- Open the fuel tap (a1).
- Cold start: Close the choke (d2).

  Warm start: Open the choke (d1).

Note: The engine is hand warm or hotter with warm start.

- Set the engine switch to "ON" (b2).
- Push the throttle lever to the left (c2).
- Pull out the starter rope (e) until compression resistance can be felt and then let it roll back in again.
- Pull the starter rope with force, but not suddenly.

  The engine starts.
- Let starter rope slowly roll back in.
- Open the choke while the engine is warming up.
- Open the throttle lever completely for operation (c1).

7.3 Operating in the forward and reverse direction

- ▶ Press the control handle in the direction of travel.

Note: The forward and reverse speed can be continuously varied.

7.4 Turn off the engine

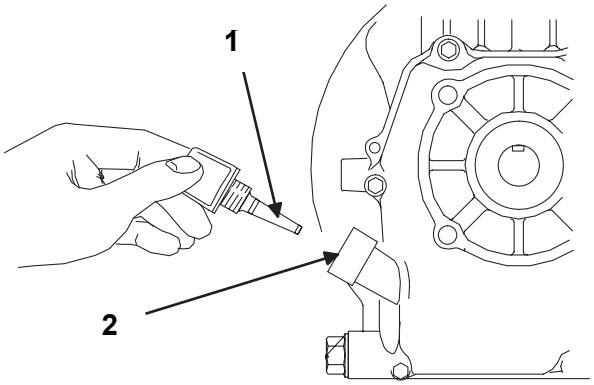
- ▶ Push the throttle lever to the right to idle operation (c3).
- ▶ Set the engine switch to "OFF" (b1).
- ▶ Close the fuel tap (a2).

8. Maintenance

8.1 Maintenance schedule

Task	Daily before operation	After the first 20 hours	Monthly or every 100 hours	Annually or every 300 hours
Check air filter: - Damage. - Tightness. - Filter element - clean or replace, if necessary.	■			
Check the tank seal for leaks - change, if necessary.	■			
Check fuel tank: - Fuel level. - Leaks. - Lines for leaks. - Check the tank seal for leaks - change, if necessary.	■			
Check engine oil level.	■			
Change engine oil.		■	■	
Check that gas control moves freely - oil gas control or lubricate engine rods, if necessary.	■			
Check and clean the spark plug.			■	
Replace the spark plug.				■
Check V-belt - change if necessary.			■	
Check exciter oil - fill if necessary.			■	
Change exciter oil.				■
Check hydraulic oil - fill if necessary.			■	
Relubricate guide handle head: - Transport retainer. - Spindle for guide handle height setting.			■	
Check that the fastening screws are tight: - Protective frame. - Central suspension.			■	
Exhaust silencer - remove combustion residue from spark catcher filter.			■	

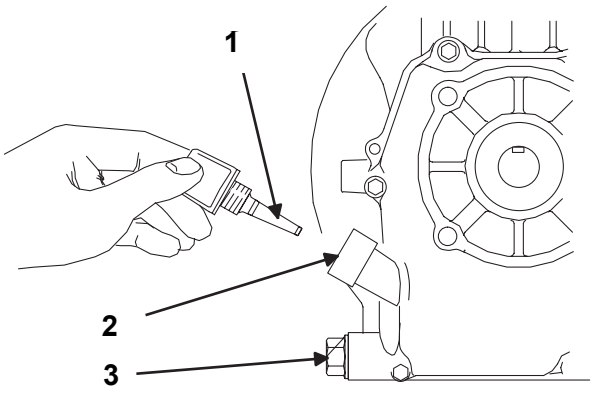
8.2 Checking engine oil level



- Place the machine upright on a flat surface.
- Remove any dirt around the oil level dipstick.
- Remove the oil level dipstick (1) and wipe it with a clean, lint-free cloth.
- Screw the oil level dipstick all the way back in and pull it out again.
- Check: The motor oil level must be between the lower and upper marks.
- If necessary, pour new engine oil into the opening (2) until the upper mark is reached on the oil level dipstick (see chapter *Technical data* for oil type).
- Screw in the oil level dipstick and tighten it by hand.

8.3 Changing the engine oil

Note: The work area should be covered with a waterproof sheet to protect the floor (protection of the environment).



- ▶ Place the machine upright on a flat surface.
- ▶ Bring the engine to a hand warm temperature, either by letting it cool down or running it until it is warm.
- ▶ Switch off the engine.
- ▶ Remove any dirt around oil level dipstick (1) and secure oil drain hose (near 3).
- ▶ Place a sufficiently large container under the oil drain plug to catch the used oil.
- ▶ Remove the oil level dipstick and wipe it with a clean, lint-free cloth.
- ▶ For oil drainage, release oil drain hose and let the used oil drain out completely.

Note: Avoid spilling oil. Remove any spilled oil immediately.

- ▶ Refasten oil drain hose.
- ▶ Pour new engine oil into the opening (2) until the upper mark is reached on the oil level dipstick.

  In doing so, screw the oil level dipstick all the way back in and pull it out again repeatedly.

  See the chapter *Technical data* for oil quantity and oil type.

Note: Avoid spilling oil. Remove any spilled oil immediately.

- ▶ Screw in the oil level dipstick and tighten it by hand.

Note: Dispose of the used oil in accordance with the applicable regulations.

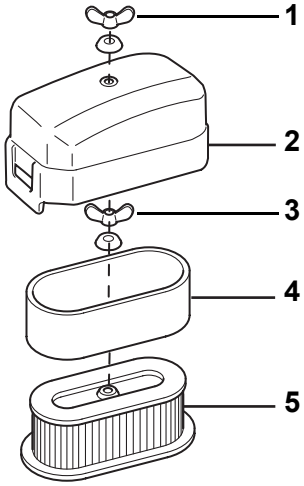
8.4 Cleaning the air filter / replacing the air filter inserts

The air filter is equipped with two air filter inserts.

WARNING
Danger of fire and explosions
if the wrong cleaning agent is used.
Do not use gasoline or any other solvents to clean components.

Note: The air filter must be cleaned every day if conditions are adverse, dry, and dusty.

Replace the air filter cartridges if it is no longer possible to remove the dirt.

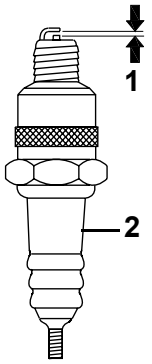


- Unscrew the wing nut (1) and remove the cap (2).
- Clean the filter bracket around the air filter cartridges (with compressed air).
- Unscrew the inner wing nut (3) and remove air filter cartridges.
- Carefully remove the foam insert (4) from the paper insert (5).
- Check both parts for damage. Replace any damaged parts.
- Wash the foam insert with warm water and a mild soap solution. Rinse with clear water. Let it dry.
- Clean the paper insert by knocking it gently and clean it with compressed air from the inside to the outside.
- Reassemble it in reverse order or with new inserts. Tighten the wing nuts by hand.

CAUTION
Operating the engine without air filter can cause rapid engine wear.
Do not run the engine without an air filter.

8.5 Checking / cleaning / replacing the spark plug

WARNING
Hot exhaust!
Touching it can cause burns.
Only remove the spark plug when the engine has cooled down.



- Remove the spark plug connector.
- Remove the spark plug with a spark plug wrench .
- Clean the electrodes with a wire brush.
- Check the isolator (2) – if damaged, replace the spark plug.
- Check and adjust the electrode gap (1) – see chapter *Technical data* for the gap.
- Insert the spark plug and tighten it with a torque wrench.

Torque [Nm]	Spark plug
15	New spark plug
25	Used spark plug

CAUTION
A loose spark plug can damage the engine.
Always tighten the spark plug.

8.6 Checking exciter V-belt

- Remove V-belt protector.
- Check exciter V-belt for signs of damage. Replace damaged exciter V-belts.
- Check tension.
- Screw the V-belt protector back on and use a torque wrench to tighten it to 10 Nm.

8.7 Changing exciter V-belt

- Remove V-belt protector.
- Remove 3 screws on engine V-belt disc.
- Remove outer half of V-belt disc.
- Change exciter V-belt.
- Press the V-belt downward into the exciter box and thread the V-belt pulley.

Note: Attach the V-belt within both roll pins.

- Attach clutch drum and tighten with 3 screws to 10 Nm.

Note: Turn the clutch drum in the process to avoid pinching the V-belt.

- Remount V-belt protector. Tighten screws with a torque wrench to 10 Nm.

8.8 Checking / filling hydraulic oil level

- Vertically set guide handle head and lock into place.
- Press the control handle in the forward movement position.
- Remove any dirt around the filler hole.
- Open the filler hole (1).
- Check: Oil level must reach upper edge of the gear.
- If necessary, fill with new hydraulic oil through the filler hole up to the upper edge of the gear (see chapter *Technical data* for oil type).
- Close the filler hole and tighten.

Note: The hydraulic control is self-bleeding.

8.9 Checking exciter oil level

- ▶ Place the machine upright on a flat surface.
- ▶ Remove any dirt around the filler hole.
- ▶ Open filler hole.
- ▶ Check: Oil level must reach the start of the thread of the filler hole.
- ▶ If necessary, fill exciter oil through the filler hole.

Note: For easier filling, use a funnel.

- ▶ Close filler hole and use a torque wrench to tighten it to 100 Nm.

8.10 Changing exciter oil

Note: The work area should be covered with a waterproof sheet to protect the floor (protection of the environment).

- ▶ Bring the engine to a hand warm temperature, either by letting it cool down or running it until it is warm.
- ▶ Switch off the engine.
- ▶ Remove any dirt around the filler hole.

WARNING
Danger through overturning.
If the machine overturns, it can cause severe injury such as crushing. Only use suitable and tested hoisting gear and lifting tackle of sufficient lifting capacity. Turn off machine in a stable position.

- ▶ Tilt machine slightly and support it.
- ▶ Place a sufficiently large container under the oil drain plug to catch the used oil.

Note: Avoid spilling oil. Remove any spilled oil immediately.

- ▶ Open oil drain plug.
- ▶ Tilt machine and let used oil drain out completely.
- ▶ Place the machine upright on a flat surface.
- ▶ Fill with new exciter oil through the filler hole to the start of the thread.
  For oil quantity see *Technical Data.*
- ▶ Screw the oil drain plug back in and use a torque wrench to tighten it to 100 Nm.

Note: Dispose of the used oil in accordance with the applicable regulations.

9. Malfunction

9.1 Forward travel speed too low

Cause	Remedy
Excessive hydraulic oil in the guide handle head.	Add oil to the fill level mark.

9.2 Reverse travel speed too low

Cause	Remedy
Insufficient hydraulic oil in the guide handle head.	Add hydraulic oil.

9.3 No forward movement

Cause	Remedy
Mechanical malfunction.	Contact Wacker Service.

9.4 Loss of hydraulic oil

Cause	Remedy
Leaks, hydraulic hose is defective.	Contact Wacker Service.

9.5 Engine will not start

Cause	Remedy
Fuel tank empty.	Refill with fuel.
Fuel tap closed.	Open.
Air filter dirty.	Clean.
Engine switch set to "OFF".	Set the engine switch to "ON".
Recoil starter defective.	Repair.
Oil level warning system turned off.	Top off with engine oil.

Malfunction

EC Declaration of Conformity

Wacker Construction Equipment AG, Preußenstraße 41, 80809 München

certifies that the construction machine:

1. Type:

Vibrating plate

2. Model:

BPU 2540 / BPU 3050

3. Machine type number:

0008954	**0008955**

4. Absolute installed power:

2.7 kW	**4.8 kW**

was assessed in accordance with the directive 2000/14/EC:

Conformity assessment procedure	At the following included test center	Measured sound power level		Guaranteed sound power level	
		BPU 2540	**BPU 3050**	**BPU 2540**	**BPU 3050**
Appendix VIII	**VDE Testing and Certification Institute Certification office Merianstraße 28 D-63069 Offenbach/ Main**	**101 dB(A)**	**105 dB(A)**	**105 dB(A)**	**108 dB(A)**

and was produced in accordance with the following directives:

*** 2000/14/EC**
*** 89/336/EC**
*** 98/37/EC**
*** 73/23/EC**
EN 500-1
EN 500-4

Dr. Stenzel
Head of Research and Development

Please keep this document in a safe place

VDE Prüf- und Zertifizierungsinstitut

VDE VERBAND DER ELEKTROTECHNIK
ELEKTRONIK INFORMATIONSTECHNIK e.V.

CERTIFICATE

Registration Number 6236/QM/06.97

This is to certify that the company

WACKER

Wacker Construction Equipment AG
Wacker-Werke GmbH & Co. KG

at the following locations

Head Office Munich
Preußenstraße 41
80809 Munich

Production plant Reichertshofen
Karlsfeld logistics centre
Sales regions with all branches all over Germany

has implemented and maintains a
Quality Management System for the following scope:

Machine manufacture
Construction machines

This Q System complies with the requirements of

DIN EN ISO 9001:2000

and the requirements of the German and international Road Traffic Act.

This Certificate is valid until 2009-06-05.

VDE Testing and Certification Institute
Certification

Date: 2006-05-30

63069 Offenbach, Merianstraße 28
Telefon: +49 (0) 69 83 06-0, Telefax: +49 (0) 69 83 06-555
E-Mail: vde-institut@vde.com, http://www.vde-institut.com

Deutscher Akkreditierungs Rat DAR

The VDE Testing and Certification Institute is accredited by DAR Accreditation Bodies according to DIN EN ISO 17020 and DIN EN ISO 45012 and notified in the EU under ID. No. 0366.

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